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Acute Coronary Syndromes

PHARMACODYNAMIC EFFECTS OF ADDING CILOSTAZOL VERSUS DOUBLE-DOSE CLOPIDOGREL IN PATIENTS WITH ACUTE MYOCARDIAL INFARCTION DURING PROTON PUMP INHIBITOR CO-ADMINISTRATION (ACCEL-PPI)

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Background: Triple antiplatelet therapy (TAPT) of adding cilostazol to dual antiplatelet therapy (DAPT) can enhance platelet inhibition in high-risk patients. Although a proton pump inhibitor (PPI) is added to DAPT to reduce the risk of GI bleeding in cardiovascular disease patients, attenuated antiplatelet effect and clinical outcomes are important concerns. The aim of this study was to assess the antiplatelet effect of TAPT in high-risk patients co-administered with PPI.

Methods: After successful PCI, 88 AMI patients were randomly assigned to either TAPT with 20mg/d omeprazole (TAPT group; n=44) or 150mg/d double-dose clopidogrel with 20mg/d omeprazole (double-dose group; n=44) for 30 days. Platelet reactivity (PR) was evaluated at discharge and 30-day follow-up by conventional aggregometry and VASP-P assay. Primary end point was 20μM ADP-induced maximal platelet aggregation (MPA) at 30-day. High on-treatment PR (HPR) was defined as 20μM ADP-induced MPA >59%.

Results: Discharge platelet measures were similar in both groups. At 30-day follow-up, MPAs with 20 and 5μM ADP stimuli were significantly decreased in TAPT group compared with double-dose group (33.3±16.6% vs. 47.2±17.7%, P <0.001 and 23.4±14.0% vs. 35.1±15.7%, P <0.001, respectively). TAPT group also had lower levels of 30-day arachidonic acid- and collagen-induced MPA than double-dose group (12.0±14.2% vs. 16.6±9.1%, P =0.124 and 31.7±18.8% vs. 41.0±18.9%, P =0.050, respectively). Similar results were observed in late PA measurements. In addition, 30-day VASP-PRI assay was lower in the TAPT vs. double-dose group (40.0±14.8% vs. 47.9±15.8%, P =0.019). The prevalence of 30-day HPR was significantly lower in the TAPT group compared with double-dose group (6.8% vs. 27.3%, P =0.011). In a multivariate analysis, TAPT was associated with the reduced risk for HPR (odds ratio 0.20, 95% confidence interval 0.04 to 0.93, P =0.040).

Conclusions: In AMI patients co-administered with omeprazole, adding cilostazol to dual antiplatelet therapy enhances platelet inhibition and reduces the risk of HPR compared with double-dose clopidogrel.